**U.S. ENVIRONMENTAL PROTECTION AGENCY COMMENTS REGARDING THE DRAFT AVERY LANDING ENGINEERING EVALUATION/COST ANALYSIS REPORT**

**(8 March 2010)**

## GENERAL COMMENT

1. The format for the Engineering Evaluation/Cost Analysis (EE/CA) document must be revised to conform to the EE/CA components and subcomponents shown in Exhibit 5 (EE/CA Outline) of the *Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA* (1993) (hereinafter referred to as "EPA Guidance"). Where appropriate other subcomponents may be added.

## SECTION 1.0 - INTRODUCTION

2. Page 1, Section 1.1, 1st sentence

The first sentence must be revised to accurately reflect the purpose of the field investigation as stated in Section 1.1 of the EE/CA Work Plan dated 23 January 2009.

3. Page 1, Section 1.2, 1st paragraph, 1st sentence

The first sentence must be revised to correct the misstatement that a primary objective of the EE/CA is to "select a removal action." While the EE/CA may recommend a preferred alternative, EPA will determine the recommendation action, and the recommended alternative may not always be the final alternative selected by EPA in the Action Memorandum.

## SECTION 2.0 - SITE BACKGROUND

This section does not include sufficient current and historical information necessary to convey a clear understanding of the nature of the site, including a thorough site description, site background, and previous removal actions.

4. Page 4, Section 2.1, 4th paragraph

Revise this section to discuss:

a. The presence of existing and/or historic aboveground and below ground power lines, pipelines, sewer lines, storm water lines/manholes, and/or utilities.

b. Whether the domestic groundwater supply well located in the western/central portion of the Potlatch property was closed in accordance with all applicable, federal, state, and local requirements.

5. Page 5, Section 2.1.1

Revise this section to provide a more thorough description of nearby residential and commercial land uses and river recreational uses such as kayaking and rafting.

6. Page 5, Section 2.2.1

Revise this section to:

a. Discuss the attempted purchase of the entire Site by Potlatch in 1980 and subsequent purchase of the eastern portion of the Site by Mr. Bentcik in 1996.

b. Delete the reference to ownership of the northern portion of both the eastern and western properties by the Federal Highway Administration (FHA). It has not been determined that FHA owns a portion of the Site. (*See also* Section 2.1, Section 2.3.4, and Figure 1-2.)

7. Page 6, Section 2.2.2

Revise this section to discuss:

a. Construction of the Chicago, Milwaukee, St. Paul, and Pacific Railroad (Milwaukee Railroad) Avery facility.

b. Operation of the Milwaukee Railroad including electrification in the mid-1910s and ending in the mid-1970s.

c. Demolition of the Milwaukee Railroad maintenance facilities, including who performed demolition and the fate of the demolition debris.

d. Potential site impacts associated with Potlatch activities occurring since 1980 which may have exacerbated existing contamination and/or introduced other contaminants to the Site such as the 1995 and 2000 cleanup actions and other Potlatch and third party activities.

e. Historically/archaeologically significant features, including conduct of a cultural resources assessment/evaluation.

8. Page 6, Section 2.2.3

Revise this section to discuss the:

a. Full spectrum of use and maintenance activities performed by the Milwaukee Railroad at the Site, including electric locomotives, use of PCBs, and cleaning of locomotives by hosing them down.

b. Link between the Site and the depot and electric substation formerly located in Avery, Idaho.

c. Presence of the 500,000 gallon aboveground storage tank (AST), other potential sources of petroleum and contaminant releases, and the cinder pit situated in Section 15.

d. Presence of the boiler house, fan house, cinder pit, other structures, and other potential sources of petroleum and contaminant releases in Section 16.

9. Page 7, Section 2.3.2

Revise this section to discuss in greater detail the surface and subsurface conditions across the site (the existing description is very general and likely does not account for variation and subareas).

10. Page 8, Section 2.3.4

Revise this section to discuss the spring located in the hillside above the former 500,000 gallon AST with respect to the spring's potential as a hydrologic boundary.

11. Page 12, Section 2.4

a. Clarify what is meant by the "most relevant" investigation reports.

b. Revise this section to also reference the following E & E report:

Ecology & Environment, Inc. (E & E), July 31, 2007. Removal Assessment Report, Avery Landing Site, Avery, Idaho, prepared for the U.S. Environmental Protection Agency, Contract Number EP-S7-06-02, TDD 07-03-004, Seattle, Washington.

12. Page 13, Section 2.5

Revise this section to:

a. Ensure that the description of the previous 1995 and 2000 removal actions at the site discuss: the scope and objectives of the actions; the amount of time spent on the actions; the amount of money spent on the actions; the nature and extent of hazardous substances, pollutants, or contaminants treated or controlled during the actions; and the technologies used and/or treatment levels used for the actions.

b. Identify on whose behalf the previous removal actions were conducted, and discuss why multiple removal actions were necessary.

13. Page 13, Section 2.5.1, 1st paragraph

Revise this section to specify the quantity of LNAPL that was recovered and sent off-site.

14. Page 13, Section 2.5.2, 2nd paragraph

Revise this section to discuss as-built information for the containment wall versus "Proposed Containment Wall Location," as shown in Figure 2-4, and discuss potential design and/or installation deficiencies. See also Section 4.7.3 (*"…observations made during reconnaissance activities in 2009 indicated LNAPL seeping from underneath a geotextile fabric that terminates at the shoreline. It is suspected that this geotextile fabric is one component of the impermeable wall installed by Hart Crowser in 2000."*) and Section 8.1.2 ("*the apparent problem with this system is that the plastic liner used for containment has gaps (particularly at the bottom) through which LNAPL can move."*)

15. Page 14, Section 2.5.2, 1st paragraph

Revise this section to also discuss the potential for LNAPL to bypass the barrier horizontally (i.e., to the west/downgradient).

16. Page 14, Section 2.5.2, 3rd paragraph

Clarify the following ambiguity:

This section states floating product was observed seeping into the river in 2005; however, Section 2.5.3 states that IDEQ recommended the use of oil absorbent booms to maintain LNAPL seeps in 2002 after LNAPL was

observed after removal actions were completed in 2000. (*See also* Comment No. 35.)

17. Page 14, Section 2.5.3

Revise this section to:

a. Accurately represent the episodic placement and maintenance of the oil absorbent booms (e.g., placement was intermittent as observed by EPA and IDEQ, and not known to be subject to comprehensive containment and recovery of free product nor an agency agreed to schedule).

b. Discuss the implication of "oil blooms" observed to occur emanating from the river bed, as opposed to solely free product discharges from the riverbank.

**SECTION 3.0 - EE/CA INVESTIGATION**

This section must be revised to begin with a comprehensive and thorough discussion of previous investigations and existing data.

18. Page 15, Section 3.0

Revise this section to include the estimated quantity, volume, size, or magnitude of contaminated material mentioned in Sections 3 or 4 (e.g., the first mention of any quantity is 106,000 tons, which is introduced in Section 8.3.) Further, the estimates must be presented relative to the field activities and the nature and extent of contamination, and explain the basis for any estimate.

19. Page 15, Section 3.1.1

Revise this section (and others, where appropriate) to address the presence of the waste disposal pits that were encountered in many areas during the 2009 investigation. Further, since the waste disposal pits included household garbage, prior remediation equipment (oil booms), and burned items, also address dioxin/furans as potential COPCs.

20. Page 17, Section 3.1.2, 2nd paragraph

Clarify what is meant by the statement "a wedge of black soil" observed across the site at approximately 2 feet below ground surface" and the statement "it is assumed that the upper 3 feet of soil within the removal area is clean" as stated on page 98.

21. Page 17, Section 3.1.2, 3rd paragraph

Given the presence of asphaltic particles in some samples and that these particles presented problems with the soil washing, address the possibility that asphalt (or heavy oil that became asphalt-like) was applied across the rail lines or other areas for dust suppression and/or used as a pesticide.

22. Page 19, Section 3.1.5.1, 3rd paragraph

Resolve the inconsistency between the text which states that sample GTP3-5 contained PCBs, and the results presented in Table 3 which indicate that PCBs were not detected.

23. Page 22, Section 3.2.2

Revise this section to address the thickness of product measured in new and existing groundwater monitoring wells and to compare such data to historic data.

24. Page 27, Section 3.2.9.1, last paragraph

Clarify why inferring aquifer property potentials requires a constant rate test.

25. Page 28, Section 3.3

Revise the discussion of the near shore investigation to take into account the past historical shoreline location, and the uncertainty inherent with the up-river background sampling locations because of the presence of the historic rail line connecting the Avery Landing site with the town of Avery and construction of Highway 50.

26. Page 31, Section 3.3.1.2, 5th sentence

Delete this entire sentence. The Avery Landing site is a former railroad roundtable and maintenance facility for electric (beginning in 1914 and continuing through the mid-1970s) and diesel locomotives, and the conclusion that PCBs in sediment may not be related to historic site lacks any merit whatsoever. Moreover, Aroclor 1260 was detected in subsurface soils, LNAPL, and river sediment. As discussed in Section 2.2.3, the likely sources are the Avery Landing railroad facility and/or or related power station with PCBs in the town of Avery other than an unknown, off-site source.

27. Page 37, Section 3.5

Revise this section to include a discussion of any modifications made to the Field Sampling and Analysis Project Plan (dated 23 June 2009).

## SECTION 4.0 - NATURE & EXTENT OF POTENTIAL CONTAMINANTS

28. Page 45, Section 8

Provide a definition for "free product" (e.g., a petroleum product that is present as a nonaqueous phase liquid. Free product includes the presence of petroleum greater than one-tenth (0.1) inch as measured on the water surface for surface water or the water table for ground water. *See* IDAPA 58.01.02.010.35.)

29. Page 46, Section 4.1.1

Resolve the contradiction between the following two statements:

> "The plume delineations were based on observations of free product in test pits and soil borings and soil sample analytical results. The difference between the plume delineation made by Hart Crowser in 2000 versus E & E in 2007 is that the plume may have grown larger by 2007 and may have extended further down-gradient to the west and southwest."

And, the following contradictory statement found in Section 4.5,

> "The 2007 E & E report concludes that the area of the free product plume has grown to the west and southwest since the 2000 Hart Crowser delineation. However, Golder disputes this conclusion because of the data gaps that remained for the western side of the Site after the 2000, 2006, and 2007 investigations."

START's observation in 2007 that the plume may have grown larger from 2000 to 2007 is based on the results of the 2000 Hart Crowser investigation (performed on behalf of Potlatch), which claimed to delineate the western extent of the plume (e.g., the Hart Crowser report did not identify the western edge of the plume as a data gap, as implied by the draft EE/CA).

30. Page 47, Section 4.1.2.2, 2nd paragraph

As stated in the text, revise Table 3-1 to summarize screening level exceedances.

31. Page 49, Section 4.1.4

An analyte that exceeds a soil screening level based on protection of groundwater cannot be eliminated from further consideration if the analyte also does not exceed a groundwater screening level. Whether or not it exceeds a groundwater criterion is irrelevant if it exceeds the soil level, particularly when the soil and groundwater samples in question are not necessarily co-located. The lack of an exceedance in groundwater does not indicate that there is no potential for leaching of chemicals from soil to groundwater now or in the future. Thus,

metals (e.g., arsenic, barium, and lead) and VOCs (e.g., benzene, TCE, xylenes) will not be eliminated as soil COPCs based on groundwater results.

32. Page 49, Section 4.1.4; page 54, Section 4.2.3; page 57, Section 4.3.3

Revise these sections to include PCBs as a COPC in soil, sediment, and groundwater, not just as a component of the LNAPL. The argument that the absence of PCBs from the LNAPL along the near shore indicates that PCBs are not being discharged to the St. Joe River by on-site courses is not supported given sustained, historic railroad electrification operations on-site (beginning in the mid-1910s and continuing through the mid-1970s), and spatial and temporal variability which affect concentrations from one location to another and from the time of day or season of the year.

33. Page 50, Section 4.1.4.2

In general, the discussion of inorganic analytes lacks clear rationale for elimination of all metals from further consideration, and must be revised to address the following:

a. Background metals concentrations from Coeur d'Alene Basin and Washington state are used to eliminate metals as COPCs; however, no discussion of why these two background data sets are appropriate and relevant to the Site is provided (e.g., similar soil/sediment/groundwater physical and chemical characteristics, sampled depths, sample collection methods, etc.) nor are these background data sets provided in tables for review.

b. Comparison of mean Site and background concentrations is qualitative or semi-quantitative (simple comparison of means or commentary that concentrations are "relatively consistent" across the site). An upper confidence limit of mean Site concentrations and use of statistical tools must be used for a more appropriate means of comparison.

c. The overall discussion lacks clarity. For example, the following statement found on page 51 "*Because of the consistency of detections and the lack of researched regional background levels, it is reasoned that vanadium concentrations are within the normal range of Site specific background concentrations and this metal is not considered a soil COPC.*" is illogical and does not justify elimination of an analyte from further consideration. On the contrary, the lack of a background data set would suggest that an analyte should be retained for further evaluation if it exceeds a screening level and certainly does not suggest that the analyte is present at background levels. The consideration of inorganic COPCs must be revised to be consistent with EPA and Idaho risk evaluation guidelines.

34. Page 52, Section 4.1.4.3, 4th paragraph

Revise to include total xylenes as a COPC. An analyte present at "mid-depth" that exceeds a soil screening level cannot be eliminated from further consideration because of its depth. It is possible that future redevelopment activities could bring this analyte to the surface where it may be contacted by human and ecological receptors.

35. Page 53, Section 4.2.1

The sole reference to E&E observing product seeping from the river bank along the property line is inaccurate and misleading. The section must be revised to accurately include and represent the following observations:

- The earliest known report of "oil emissions into the river . . . coming from the "Milwaukee Railroad roundhouse" (dated 1 June 1970).

- The draft EE/CA reports states "about 2005 when floating product became visible at times seeping into the river along limited sections of the river bank" (Page 13, Section 2.5.2); and

- Section 2.5.3 which states "As recommended by the IDEQ in a letter dated January 18, 2000, and because seeps containing floating LNAPL have been observed after the removal actions were completed in 2000, oil absorbent booms have been placed around the LNAPL discharging seeps when the river is not iced to minimize further impacts to the St. Joe River."

36. Page 56, Section 4.3.1, 2nd paragraph

Delete this entire paragraph. The discussion about potential contamination from LNAPL in EPA samples during the 2007 removal assessment is disingenuous because it ignores comments from EPA in response to similar allegations that were made during the review of planning documents.

37. Page 58, Section 4.3.3.2, 2nd paragraph, and page 68, Section 4.7.4

If "*an anaerobic groundwater condition caused by the presence of petroleum hydrocarbons*" is given as a rationale for eliminating analytes from further consideration, this section must be revised to include a discussion of this anaerobic condition and resulting chemical reactions needs to be provided in addition to data supporting the assumption that anaerobic conditions are present.

38. Page 60, Section 4.3.4.1, and Table 4-1

Clarify why thallium detected at concentrations above water quality standards in several wells is considered a COPC for the groundwater-to-surface water pathway but not for groundwater.

39. Page 61, Section 4.4.3; page 64, Section 4.6.4; page 4.7.2, Section 4.7.2

The statement that negligible detections of analytes in surface water are evidence that groundwater is not discharging to surface water is not supported by the information provided, and must be revised. The presence of PAHs in the shoreline and near-shore sediments suggests that both groundwater and LNAPL are discharging to the river. The reason for low detections in surface water are more likely due to the sampling method (single/discrete grab samples) and the fact that PAHs are more likely to partition to organic matter in sediment and suspended particulates than to surface water.

40. Page 69, Sections 4.8.1,

Where found for antimony, iron, and manganese, delete those sentences referring to "Because . . . is a naturally occurring element, it will persist forever in the environment."

41. Page 71, Section 4.8.2, 1st paragraph, 1st sentence

Revise to delete this sentence. There is no evidence supporting this statement, and DNAPLs will remain as a potential site contaminant and a data gap due to the past use of bunker C fuel.

42. Page 72, Section 4.10

a. 1st bullet. Discuss the importance of this data gap and what impact it may have on the selection of the removal action.

b. 3rd bullet. Delete the existing sentences and substitute the following sentence, along with another sentence discussing what impact it may have on selection of a removal action other than excavation (e.g., recovery):

"The extent of contamination found along and below Highway 50 both east and west of the former 500,000 AST."

c. 5th bullet. Revise the existing sentence to include south of TP-2 and TP-3, and the area near TP-5.

d. 6th bullet. Discuss the importance of this data gap and what impact it may have on the selection of the removal action.

**SECTION 5.0 - STREAMLINED RISK ASSESSMENT**

The discussion of COPC selection does not provide a clear and justifiable rationale for elimination of chemicals from further consideration when they are present at levels that exceed screening levels. Also, the COPC selection process is not consistent with EPA risk assessment guidance, and selected

screening levels provided in tables are not well-referenced, making it difficult to confirm their accuracy.

43. Page 77, Section 5.2.1

The maximum depth to which humans and burrowing animals are expected to access subsurface soils should be defined to support depth of soils data evaluated in risk evaluations. Also, the potential for bringing subsurface soils to the surface during future grading and excavation associated with site redevelopment should be addressed.

44. Page 78, 5.2.2.1, Subsections I and II; page 79, Section 5.2.2.3; and page 84, Section 6.1.1.1

General statements are made regarding risks to other receptor populations (part-time residents, future residents, recreational users/trespassers, workers, etc) that are not supported by quantitative evaluation of these alternative receptors. Thus, this subsection and others must be revised to provide a more thorough discussion (qualitative or semi-quantitative) to support these statements.

45. Page 79, 5.2.2.2 and 5.2.2.3; page 80, Section 5.2.2.4

No risks were calculated for ingestion of groundwater (future scenario), contact with surface water and sediment, or contact with LNAPL; therefore, the statements regarding risks associated with exposure to groundwater, surface water, and LNAPL are not supported and must be revised accordingly.

46. Page 82, Section 5.3.2

Data gaps or uncertainties regarding the home range of ecological receptors and likelihood of ecological receptors drinking from the site shoreline are not justifiable reasons to conclude that “LNAPL is not expected to pose a significant and unacceptable risk,” particularly when risks were not even quantified. Thus, this section must be revised accordingly.

47. Page 83, Section 5.3.3.1

The statement that the LNAPL “may be considered a nuisance and objectionable” and associated discussion of ecological receptor contact with LNAPL completely ignores the potential for toxicity of LNAPL to trout. Thus, this section must be revised accordingly.

48. Page 83, Section 5.3.3.2, 1st paragraph, last sentence

Delete the last sentence which is not supported. The Milwaukee Railroad operated on the site from the mid-1910s through the mid-1970s, and operations extended from the site to the town of Avery which is located approximately 1 mile upstream.

## SECTION 6.0 - REMOVAL ACTION OBJECTIVES

49. This section must be revised to conform to Exhibit 5 of the EPA Guidance document. In particular, title this section "Identification of Removal Action Scope, Goals, and Objectives," and include subsections titled "Statutory Limits on Removal Actions," Determination of Removal Scope," "Goals and Objectives of the Removal Action," "Determination of Removal Schedule," and Planned Removal Activities."

50. Insert the following statement for statutory limits on removal actions:

> ""To the extent that a private entity undertakes the proposed CERCLA removal action, the statutory limits (monetary ceiling and duration) for fund-financed removal actions do not apply."

51. Insert the following statement for determination of removal scope:

> "The removal actions presented within this EE/CA are intended to address the human health and ecological risks identified within the streamlined risk assessment."

52 Page 84, Section 6.1

Rename this section "Goals and Objectives of the Removal Action" and revise to address preceding comments regarding the source, nature, and extent of contamination and the streamlined risk assessment. In particular, RAOs must consist of medium-specific (or operable unit-specific goals) for protecting human health and the environment. The objectives should be as specific as possible but not so specific that the range of alternatives that can be developed is unduly limited. Further, the RAOs should specify the contaminants of concern, exposure route(s) and receptor(s), and an acceptable contaminant level or range of levels for each exposure route.

53. Insert the following for determination of removal schedule:

> "The general schedule for removal activities, including both the start and completion time for the action, will be subject to negotiation of another Administrative Order on Consent with the Respondent for conduct of the action itself."

54. Page 84, Section 6.1.1

The summary of human and ecological risks must be revised to address sediment contamination and exceedances of screening levels discussed previously in Section 5.3.

55. Page 85, Section 6.1.1.2

This section must be revised to clarify whether all ecological receptors were considered in the ecological risk assessment or only “algae and some fish” were considered as stated in Section 4.8.1.

56. Page 85, Section 6.2

As discussed in Comment No. 52, the proposed RAOs must be revised to address the potential human health and ecological risks identified for the site, including soil, sediment, surface water, and groundwater. As presented, the RAOs narrowly focus on only prevent human and ecological receptors from direct contact with undefined areas of surface soil and to control LNAPL discharge.

**SECTION 7.0 - IDENTIFICATION AND SCREENING OF REMOVAL TECHNOLOGIES**

This section must be deleted in its entirety and revised as discussed below It is not responsive to the intended purpose, which is to identify a limited number of technically practicable and implementable general response actions (GRAs) appropriate for addressing the project removal action objectives (RAOs). Further, as discussed in Comment No. 1, the revised presentation may be inserted as a subsection (e.g., Identification of General Response Actions) under the major section “Identification and Analysis of Removal Action Alternatives.”

57. Page 86, Section 7.0

Based on the site-specific conditions and the analysis of the nature and extent of contamination, revise this section to include only the following potential GRAs: no action; institutional controls; containment; discharge; extraction; treatment; excavation; and disposal.

An appropriate level of descriptive detail for each GRA is provided with the following examples:

- No Action. This alternative would leave the existing conditions as they currently exist. Contamination that is present would remain in-place, and no removal actions would be taken.

- Institutional Controls. Institutional controls (ICs) are administrative or legal measures and access modifications that do not involve construction or physically changing the site. Some examples of ICs include easements, covenants, well drilling restrictions, and special building permit requirements. ICs are designed to lower the potential for people and the environment to be exposed to contamination, and are normally used when waste is left on-site and when there is a limit to the activities that can

safely take place at the site. ICs are typically meant to supplement engineering controls.

- Treatment. Treatment is intended to remove or render non-hazardous contaminants in media. Treatment can be accomplished on-site using extraction and treatment options on- or off-site. In many instances, a treatability study is necessary to assure the attainment of treatment objectives. Monitoring and maintenance may be required to ensure the continuing effectiveness of treatment.

## SECTION 8.0 - ASSEMBLY AND SCREENING OF REMOVAL ALTERNATIVES

This section must be deleted in its entirety and revised as discussed below. Rather than limiting the presentation to only the most qualified technologies that apply to media or source of contamination, technologies are presented with no rational or appreciable basis for distinction, definition, and evaluation. Further, as discussed in Comment No. 1, the revised presentation may be inserted as a subsection (e.g., Development of Removal Action Alternatives) under the major section "Identification and Analysis of Removal Action Alternatives."

58. Based on the GRAs identified in Comment No. 57, only the following removal action alternatives are identified for detailed and comparative analysis:

a. "**Alternative 1 - No Action**" described and discussed as a baseline against which to compare removal action alternatives.

b. "**Alternative 2 – Groundwater Containment, Extraction, Treatment, and Discharge**" described and discussed as containment to control groundwater flow in horizontal and vertical directions and gradient control; a series of extraction wells to extract contaminated groundwater; on-site treatment of contaminated groundwater; off-site disposal of recovered free product; and on-site discharge of treated groundwater to surface water and/or groundwater. The scope must also address the removal of the existing groundwater containment and extraction system components, disposition of treatment residuals, institutional controls, and long-term monitoring.

c. "**Alternative 3 – Groundwater Containment, Extraction, Treatment, and Discharge; Source Area Excavation**" described and discussed as (1) containment to control groundwater flow in horizontal and vertical directions and gradient control; a series of extraction wells to extract contaminated groundwater; off-site disposal of recovered free product; on-site treatment of contaminated groundwater; and on-site discharge of treated

groundwater to surface water and/or groundwater; and (2) excavation of petroleum-contaminated soil and free product and on-site treatment using physical and/or thermal treatment or off-site disposal. The scope must also address the removal of the existing groundwater containment and extraction system components, disposition of treatment residuals, institutional controls, and long-term monitoring.

d. "**Alternative 4 – Source Area Excavation**" described and discussed as the excavation of petroleum-contaminated soil and free product and on-site treatment using physical and/or thermal treatment or off-site disposal. The scope must also address the removal of the existing groundwater containment and extraction system components, containment and/or hydraulic isolation, disposition of treatment residuals, and long-term monitoring.

Each alternative will be presented in sufficient detail to enable individual and comparative analysis, including, but not limited to: the size, configuration, and location of newly constructed on-site groundwater and surface water containment, extraction, treatment, and discharge systems; the timeframe within which the alternatives might be achieved; the locations of source areas to be excavated; the approximate quantities of groundwater and surface water to be extracted, treated, and discharged; the quantity of recovered freee product to be sent off-site for disposal; the volumes of soil and sediment to be excavated and treated; and any other information needed to adequately describe each alternative.

59. Page 90, Section 8.1.5

Monitored natural attenuation (MNA) is unacceptable as a treatment technology and must be deleted. Natural attenuation is not a default alternative or a presumptive remedy. The timeframe required for MNA is often longer than that required for active response actions, and as a consequence, the uncertainty associated with this approach increases dramatically. The Respondent has not documented MNA through historical trends indicating a decrease in contaminant concentrations over time and a plume that is stable or retreating; chemical indicators; or laboratory "microorganisms. (*See* other sections where MNA is discussed and where it must be deleted such as 8.2.5 and 9.1.2.)

60. Page 91, Section 8.2.2

The description and discussion of institutional controls (ICs) is wholly inadequate. Institutional controls such as placing booms in the river and collecting LNAPL are presented as if they have been successful in the past. However, they have not been successful, which is the reason for the current non-time critical removal action.

## SECTION 9.0 (DESCRIPTIONS OF THE ALTERNATIVES) AND SECTION 10.0 (DETAILED EVALUATION OF ALTERNATIVES)

These sections must be deleted in their entirety and revised into two subsections as discussed below. Further, as discussed in Comment No. 1, the revised presentations may be inserted as subsections under the major section "Identification and Analysis of Removal Action Alternatives."

61. Title the first subsection "Analysis of Removal Action Alternatives." This subsection will independently evaluate the relative performance of each removal action alternative listed in Comment No. 57 against the short- and long-term aspects of the three broad criteria and subcriteria identified in Exhibit 7 of the EPA Guidance document.

62. Title the second subsection "Comparative Analysis of Removal Action Alternatives." This subsection will identify the advantages and disadvantages of each alternative relative to one another so that key tradeoffs that could affect the removal action selection can be identified. This is in contrast to the preceding analysis in which each alternative was analyzed independently without consideration of other alternatives.

## TABLES

### TABLE 7-1 - IDENTIFICATION OF REMEDIATION TECHNOLOGIES

63. This table must be revised consistent with the preceding comments. Further, the screening comments should be void of subjective statements lacking merit.

## FIGURES

64. Figure 2-1, Historical Railroad Facility Layout

Figure 2-1 shows the historical layout of the railroad workings at the Avery Landing site, but the depiction of the shoreline appears to be inaccurate. Examining the black and white historical railroad sketch shows the St. Joe shoreline much closer to the edge of the roundhouse and the buildings west of the roundhouse.

65. Figure 5-1, Conceptual Site Model for Human and Ecological Risk Evaluation

    a. All pathways for off-site residents are incomplete yet no explanation is provided. If no off-site residents are present, then this should be stated to support this assumption (particularly to eliminate the inhalation of wind-blown dust pathway).

b. Contact with groundwater is listed as an incomplete exposure pathway for all receptor populations except the resident. However, groundwater may be used for irrigation, in which case all receptors (residents, trespassers/recreational users, construction workers, and/or ecological receptors) may contact COPCs in groundwater. Also, future construction workers may contact shallow groundwater while performing intrusive activities (laying utilities, etc).

c. Fugitive dust should be considered a potentially complete pathway for ecological receptors. While it may not be quantified in the risk evaluation, it is certainly possible for receptors to inhale resuspended dust.

d. The CSM indicates that groundwater migrates to surface water and seep water (independent of LNAPL), which contradicts discussion of groundwater and LNAPL migration to surface water in text.

e. Ingestion of aquatic organisms is limited to on-site residents and recreational users. Even if this pathway is not quantified in the risk evaluation, it is also a potentially complete pathway for terrestrial wildlife and aquatic species.

f. Incidental ingestion of sediment should be depicted as a potentially complete pathway for terrestrial wildlife.

g. Incidental ingestion of soil is a potentially complete pathway for burrowing terrestrial wildlife; discuss the maximum depth at which contamination is found and maximum depth to which burrowing animals are expected.

h. Ingestion of and dermal contact with surface water are complete exposure pathways for terrestrial wildlife, but are listed as insignificant and incomplete, respectively, in the CSM.

## APPENDICES

## APPENDIX C – LABORATORY ANALYTICAL REPORTS & DATA VALIDATION

66. Minor errors were noted in screening levels for metals (National Primary Drinking Water Standards and EPA Regional Screening Levels). In each case, the values used in the COPC screening were lower, or more health-protective, than the correct values.

67. Sediment and surface water screening levels for total PCBs were used to screen Aroclor mixtures. Recommend using screening levels for Aroclors or using analytical results for total PCBs.

## APPENDIX H – PERTINENT FEDERAL AND STATE LAWS AND REGULATIONS

Overall, this appendix is poorly written and insofar that it does not provide sufficient information regarding the types of ARARs (i.e., action, chemical, and location), provide chemical-specific numerical values where appropriate, or for action- and location-specific ARARs provide action or location, requirement, prerequisite for applicability, or full citation. Further, ARARs are cited for other than Idaho (e.g., Washington MTCA statute and WAC regulations).

68. Revise Appendix H to include the following introduction:

**"Potential Applicable or Relevant and Appropriate Requirements (ARARs)**

ARARs are defined in CERCLA Section 121 and the NCP [40 CFR Part 300]. "Applicable" requirements are those cleanup standards and other environmental protection requirements promulgated under federal or state law that specifically address a hazardous substance, pollutant, contaminant, location, response action, or other circumstance at a site. While not applicable to a particular circumstance at a CERCLA site, "relevant and appropriate" requirements address problems or situations sufficiently similar to those encountered at a site that their use is well suited to the site. ARARs fall into three broad categories, based on the manner in which they are applied: chemical-, action-, and location-specific. In general, only the substantive requirements of an ARAR must be implemented at site.

Chemical-specific ARARs include requirements that regulate the release to, or presence in, the environment of materials with certain chemical or physical characteristics, or containing specified chemical compounds. The requirements are usually either health- or risk-based numerical values or methodologies that establish the acceptable amount or concentration of a chemical that may remain in or be discharged to the environment.

Action-specific ARARs set performance, design, or similar controls or restrictions on particular kinds of activities related to the management of hazardous substances, pollutants, or contaminants. The ARARs are activated by the particular response action selected for implementation, and indicate how, or to what level, the alternative must achieve the requirements. Location-specific ARARs relate to the geographic or physical position of the site. Response actions may be restricted or precluded depending on the location or characteristics of the site and the requirements that apply to it. Location-specific ARARs may apply to actions in natural or man-made features. Examples of

natural site features include wetlands and floodplains. An example of a man-made feature is an archaeological site.

**To-Be-Considered Materials (TBCs)**

TBCs are non-promulgated criteria, advisories, guidance, and proposed standards issued by federal, state, or tribal governments that, although not legally enforceable, may be helpful in establishing protective cleanup levels and developing, evaluating, or implementing remedy alternatives. If no ARARs address a particular chemical or situation, or if existing ARARs do not provide adequate information, TBCs may be available for use in developing remedial alternatives.

**State Regulations**

Under CERCLA, State of Idaho cleanup standards, standards of control, and other substantive environmental protection requirements, criteria, or limitations promulgated by the State of Idaho are potential ARARs. Determination of whether these State of Idaho standards, requirements, criteria, and limitations become ARARs is conducted using the eligibility criteria set forth in Section 121 of CERCLA (i.e., the requirements are promulgated, legally enforceable, generally applicable, more stringent than federal requirements, and identified in a timely manner)."

69. The proposed list of ARARs must be reviewed for accuracy and revised to provide greater specificity, including distinguishing between action-, chemical, and location-specific ARARs, and for each ARAR, a discussion of the requirement and prerequisite for applicability. For example, the NPDES discussion mistakenly refers to a required permit process, and the following ARAR descriptions are offer little, if any, insight into whether the ARARs apply to the site:

- National Secondary Drinking Water Standards with respect to citing the State of Washington Model Toxics Control Act;

- Clean Water Act of 1977 with respect to citing WAC 173-201A v. the Idaho Water Quality Standards (IDAPA 58.01.02); and

- Idaho Environmental Protection and Health Act, Title 39 Health and Safety, Chapter 1 with respect to stating that the "Site must comply with all state regulations imposed by this act."

70. Revise to delete the references to MTCA and WAC (see discussion regarding the National Secondary Drinking Water Standards and Water Quality Standards discussion of applicability), and delete the RCRA reference to the Bevill Amendment .

71. Revise to include the following ARARs:

**Resource Conservation and Recovery Act [42 USC § 6901], Subtitle C - Hazardous Waste Management [40 CFR Parts 260 to 279].** Federal hazardous waste regulations specify hazardous waste identification, management, and disposal requirements. Applicable or relevant and appropriate requirements of RCRA Subtitle C (or the state equivalent) may be satisfied by off-site disposal, consistent with the Off-Site Rule, 40 CFR 300.440. RCRA Subtitle C also provides treatment standards for debris contaminated with hazardous waste ("hazardous debris"), 40 CFR 268.45, although the lead agency may determine that such debris is no longer hazardous, consistent with 40 CFR 261.3(f)(2), or equivalent state regulations. The particular provisions of Subtitle C that are applicable or relevant and appropriate for discrete response actions will be identified through the remedial design process. Where Idaho has an authorized state hazardous waste program, it applies in lieu of the federal program.

**Resource Conservation and Recovery Act [42 USC § 6901], Subtitle D - Managing Municipal and Solid Waste [40 CFR Parts 257 and 258].** Subtitle D of RCRA establishes a framework for controlling the management of non-hazardous solid waste. Subtitle D is potentially applicable to solid waste generation and management at the Site.

**Clean Water Act--National Pollution Discharge Elimination System [33 USC § 1342].** The NPDES regulations establish requirements for point source discharges and storm water runoff. In particular for the Site, these regulations are potentially applicable for any point source discharge of contamination to surface water, including storm water runoff at the Site. If response activities at the Site involve clearing, grading, excavating, or other response activities that will disturb more than one acre of land resulting in storm water discharges, such activities must comply with the substantive requirements for a Construction Stormwater General Permit to prevent or minimize the discharge of pollutants in storm water runoff from the disturbed areas to waters of the United States.

**Federal Water Pollution Control Act--Discharge of Dredge and Fill Materials [Clean Water Act; 33 USC § 1344, Section 404].** Section 404 of the CWA establishes a program to regulate the discharge of dredged and fill materials into the waters of the United States, including wetlands. The substantive provisions of this requirement are potentially applicable to response actions involving dredging, filling, diversion, and/or construction in streams or wetlands at the Site.

**National Historic Preservation Act [16 USC § 470f; 36 CFR Parts 60, 63, 800].** The National Historic Preservation Act (NHPA) and implementing regulations require federal agencies to consider the possible effects on historic sites or structures of any actions proposed for federal funding or approval.

Historic sites or structures are those included on or eligible for the National Register of Historic Places (NRHP), generally older than 50 years. If an agency finds a potential adverse effect on historic sites or structures, such agency must evaluate alternatives to "avoid, minimize, or mitigate" the impact, in consultation with the State Historic Preservation Office (SHPO). The NHPA and implementing regulations are potentially applicable to response actions such as demolition of old mine or mill structures on the Site. In consultation with the SHPO, unavoidable impacts on historic sites or structures may be mitigated through such means as taking photographs and collecting historic records.

**Archaeological Resources Protection Act [16 USC § 470aa *et seq*.; 43 CFR Part 7].** The Archaeological Resources Protection Act (ARPA) and implementing regulations prohibit the unauthorized disturbance of archaeological resources on public or Indian lands. Archaeological resources are "any material remains of past human life and activities which are of archaeological interest," including pottery, baskets, tools, and human skeletal remains. The unauthorized removal of archaeological resources from public or Indian lands is prohibited without a permit, and any archaeological investigations at a site must be conducted by a professional archeologist. ARPA and implementing regulations are applicable for the conduct of any selected response actions that may result in ground disturbance.

**Native American Graves Protection and Reparation Act [25 USC § 3001 *et seq*; 43 CFR Part 10].** The Native American Graves Protection and Repatriation Act (NAGPRA) and implementing regulations are intended to protect Native American graves from desecration through the removal and trafficking of human remains and "cultural items" including funerary and sacred objects. The requirements of this Act must be followed when graves are discovered or ground-disturbing activities encounter Native American burial sites. This Act is potentially applicable to the Site where response actions involve disturbance/alteration of the ground and/or site terrain.

**Endangered Species Act [16 U.S.C. §§ 1531 – 1544; 50 CFR Parts 17, 402].** The Endangered Species Act (ESA) protects species of fish, wildlife, and plants that are listed as threatened or endangered with extinction. It also protects designated critical habitat for listed species. The Act outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species, including consultation with resource agencies. The requirements of this Act are potentially applicable to the Site since listed threatened or endangered species habitat areas will, or could, be impacted by response action. Consistent with ESA Section 7, if any federally designated threatened or endangered species are identified in the vicinity of remediation work, and the action may affect such species and/or their habitat, EPA will consult with USFWS to ensure that response actions are conducted in a manner to avoid adverse habitat modification and jeopardy to the continued existence of such species.

**Migratory Bird Treaty Act (MBTA), 16 USC § 703 et seq.** The MBTA makes it unlawful to "hunt, take, capture, kill" or take various other actions adversely affecting a broad range of migratory birds, including tundra swans, hawks, falcons, songbirds, without prior approval by the U.S. Fish and Wildlife Service. (See 50 CFR 10.13 for the list of birds protected under the MBTA.) Under the MBTA, permits may be issued for take (e.g., for research) or killing of migratory birds (e.g., hunting licenses). The mortality of migratory birds due to ingestion of contaminated sediment is not a permitted take under the MBTA. The MBTA and its implementing regulations are potentially relevant and appropriate for protecting migratory bird species identified. The selected response action will be carried out in a manner that avoids the taking or killing of protected migratory bird species, including individual birds or their nests or eggs.

**Oil Pollution Prevention, Spill Prevention, Control, and Countermeasure (SPCC) Rule, 40 C.F.R. Part 112.** The SPCC rule requires facilities that could reasonably be expected to discharge oil in quantities that may be harmful into navigable waters of the United States and adjoining shorelines to development and implement SPCC Plans.

**Executive Order 11,990 - Protection of Wetlands.** Executive Order 11,990 requires that potential impacts to wetlands be considered, and as practical, destruction, loss, or degradation of wetlands be avoided. EPA promulgated regulations to implement this Executive Order under 40 CFR Part 6. The requirements of this Executive Order are potentially relevant and appropriate to response actions that take place.

## APPENDIX I – HUMAN HEALTH RISK EVALUATION CALCULATIONS

72. Table I-1, I-2: Idaho's Risk Evaluation Manual (REM) provides some exposure assumptions that are inconsistent with and in some cases less health-protective than EPA risk assessment guidance. For example, the REM provides an exposure frequency (EF) of 270 day/yr and exposure duration (ED) of 15 years whereas EPA recommends an EF of 350 day/yr and ED of 30 years for residents, respectively. Also, recommended skin surface area values and dermal absorption fraction from soil are slightly lower in the REM compared to EPA guidance. Alternatively, the REM assumptions are more conservative for direct contact with soil (adult and child adherence factors of 0.3 and 1.0 mg/cm$^2$-day, respectively) than EPA guidance (0.07 and 0.2 mg/cm$^2$-day, respectively).

73. Table I-2: The table shows an error in the inhalation rate used for adults for risks associated with Sample ESB-04-SB 03 and ESB-04-SB 07. A value of 1.3 m$^3$/kg is recommended by Idaho's REM but a value of 1.1 m$^3$/kg (child value) was used. This is expected to slightly underestimate risks for inhalation exposure to those two samples. Inhalation risks are negligible and so this error likely does not have an affect on overall risk results.

74. Table I-1, I-2: A particulate emission factor (PEF) of 8E+08 $m^3$/kg was used but no explanation is provided for how this value was derived. EPA's default PEF used in developing the RSLs is 4.63E+09 $m^3$/kg.

75. Table I-1, I-2: Idaho's REM methods for evaluation of inhalation risks/hazards are inconsistent with EPA's methods. EPA recommends using a reference concentration (RfC) for inhalation exposures to noncarcinogenic chemicals and an inhalation unit risk factor (URF) for exposures to carcinogenic chemicals. Instead, Idaho uses simple route-to-route extrapolation of the oral RfD and cancer slope factor (CSF). Use of appropriate toxicity values would change risk results, though the differences are likely negligible.

76. Table I-1 and I-2: The tables include inhalation URFs for noncarcinogenic chemicals, when this parameter is used only for carcinogenic chemicals. It is not clear what the values that are currently listed as noncarcinogenic inhalation URFs pertain to. This makes it difficult to determine what values were used in estimating risks. The appropriate toxicity values should include: oral CSF and inhalation URF for the cancer risk evaluation and oral RfD and inhalation RfC for the noncancer hazard evaluation.

77. Table I-1, I-2: The cancer risks for adults do not include exposures during childhood, as dictated in EPA risk assessment guidance.